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Tietjen, Anne; Jørgensen, Gertrud

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THERE IS MORE TO IT THAN MEETS THE EYE: STRATEGIC DESIGN IN THE CONTEXT OF RURAL DECLINE

Anne Tietjen^a, Gertrud Jørgensen^b

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Abstract

Based on a Danish case, this paper investigates how strategic urban and landscape design can contribute to positive developments in rural areas that are challenged by population decline. From 2007–2012, the municipality of Bornholm conducted a strategic planning process, which aimed to enhance quality of life by strengthening place-based qualities and potential through local physical projects. Guided by actor-network theory (ANT) we analyse the socio-material effects of the new assemblages of people and things around the design interventions that were made. We find that strategic spatial projects can contribute considerably to quality of life in declining rural areas. From a wider strategic perspective, they can also define new spatial development perspectives rooted in place-based resources and potential. Methodologically, ANT offers a pertinent framework for studying the long-term performance of strategic spatial projects and how design actions can continue to gather new actors, spark new initiatives and, thereby, fuel repercussive effects.

Keywords

Strategic spatial design, socio-material effects, rural decline, actor-network theory, Denmark.

a (Corresponding author) Section for Landscape Architecture and Planning, University of Copenhagen, Rolighedsvej 23, 1958 Frederiksberg, Denmark. E-mail: atie@ign.ku.dk

b Section for Landscape Architecture and Planning, University of Copenhagen, Rolighedsvej 23, 1958 Frederiksberg, Denmark. E-mail: gejl@ign.ku.dk

‘Eventually everything connects – people, ideas, objects... the quality of the connections is the key to quality per se.’ Charles Eames

1. Introduction

Rural decline is considered a major spatial planning issue in Denmark. Since the 1990s, work places and population have been increasingly concentrated in the bigger cities (Ministeriet for By, Bolig og Landdistrikter, 2013). Traditional rural industries, such as agriculture, fisheries and mining industries, have declined in relative importance and, as a consequence, many production areas and buildings have lost their original functions and have been abandoned (Sloth Hansen, Møller Christensen and Skou, 2012).

The main problem that peripheral rural areas face today is demographic: loss of population in general, an increasingly aging population (KL's analyseenhed, 2015), and a lack of individuals with the skills needed to fill jobs in the knowledge-based industries (see, Egedal, 2017 on the case of Bornholm).

Urbanisation is a driver of population decline in peripheral areas. At the same time, urban lifestyles are expanding into rural areas, not only close to the big cities, but also further away in relatively remote areas in the form of counter or hidden urbanisation, both in the countryside (Madsen et al., 2010; Zasada et al., 2011) and in small towns (Fertner et al., 2015). The rural urbanites are well educated, commute to work over long distances, seek a well-functioning service infrastructure, and value attractive built environments as well as accessible landscapes for recreation and outdoor activities. Today, in terms of people's way of life, Denmark is a predominantly urbanised country (Tietjen, 2011). The spatial conditions in declining rural areas do not cater well for such urbanised lifestyles, and traditional rural policies have focused primarily on agricultural subsidies.

In recent years, however, new ways of dealing with rural decline have emerged. The ‘new rural paradigm’ in European rural policy involves a move away from agricultural subsidies towards strategic investments that utilise local strengths and opportunities (Bryden and Hart, 2004; OECD, 2006). This policy shift has also influenced Danish rural policies (Ministeriet for By, Bolig og Landdistrikter, 2013) and stimulated new place-based and project-oriented approaches to spatial development.

Several innovative planning initiatives involving many municipalities and projects have shown that spatial development within declining rural areas is being increasingly considered a strategic transformation task whereby the adaptation and renewal of the existing built environment plays an important role in adapting to structural economic and demographic changes and new, urbanised, ways of life (Sloth Hansen, Møller Christensen and Skou, 2012; Tietjen and Jørgensen, 2016). In line with this, urban design and landscape design projects are being carried out as strategic spatial projects to achieve social, economic, and environmental changes beyond the immediate purpose of the given project and across multiple scales: locally, regionally and even internationally. The general idea of strategic spatial projects is to steer spatial development in a desired direction through strategic interventions (Burgess and Carmona, 2009; Oosterlynck, Albrechts and Van den Broeck, 2011; Tietjen, 2017).

These emerging practices require a new and broader understanding of urban and landscape design quality; not only in terms of form and function, but also the tangible and intangible effects that design generates in a wider spatial and strategic perspective. Strategic thinking raises the question: what is the transformative capacity of spatial design? This in turn requires new methods for assessing the outcome of spatial design in new ways: studying not only the concrete design interventions, but also what design *does* in a wider perspective.

Based on a recent Danish case, this paper investigates the transformative effects of strategic urban and landscape design in the context of rural decline. We ask: how can spatial design contribute to developing rural areas that are challenged by population decline?

From 2007–2012 the municipality of Bornholm, in partnership with the philanthropic organisation, Realdania, conducted a strategic, collaborative planning initiative at the municipal level called *Land of Opportunities*

(Mulighedernes Land). This initiative aimed to enhance quality of life and improve the framework for settlement and tourism by strengthening place-based qualities and potential through local physical projects. Four of the realised seven projects dealt with the transformation of post-industrial mining and fishery landscapes into new or improved public spaces; the former granite shipping harbour Hammerhavn, the beach of the mining and fishing village of Sandvig, the closed granite quarries of Ringebakker, and the underused fishing harbour of Hasle. This paper analyses the transformative effects of these projects in a socio-material perspective.

Guided by actor-network theory (ANT), we propose an operational framework for studying what design does; apply this framework to the four cases; analyse and discuss the results; and outline some conclusions with implications for research and practice.

2. Theoretical Framework: An ANT View on Urban Design

Actor-network theory (ANT) offers a method to study how complex actor-networks of people, ideas and things 'reassemble the social' (Latour, 2005). Originally developed to analyse research and technological innovation processes, actor-network studies are increasingly being used in the study and conceptualisation of spatial planning, urban design and architecture (see, for instance: Healey, 2007; Tietjen, 2011; Yaneva, 2012; Beauregard, 2015).

ANT proposes 'the idea of engagement with socio-technical systems rather than just with the (human) actors as the key to understanding planning outcomes and offering a better planning practice' (Rydin, 2010, p.266). Due to the fact that 'the structure of the material world pushes back on people' (Yaneva, 2009, p.277), actor-network theorists argue that agency – the capacity to act in the world – is not limited to intentional human action. Indeed, '*any thing* that does modify a state of affairs by making a difference is an actor' (Latour, 2005, p.71). Through transformative interaction, human and non-human actors gather in dynamic networks, what actor-network theorists call socio-material *assemblages*. Things – such as designed objects – are thus a constitutive part of social reality and all action is distributed and shared among heterogeneous actors (Lieto, Beauregard, 2013, p.11). Precisely because ANT equally perceives people and things as agents of change, we find that it can offer an operational framework for studying the socio-material effects of urban design actions.

2.1. Strategic Design as Translation

With ANT, we can understand strategic design as a *translation* of existing interactions into desired interactions between human and non-human actors. Through the design process, humans and things are being assembled to work together for shared purposes in new socio-material assemblages. Following the model developed by Michel Callon (1986) a translation process has four decisive moments – problematisation, interessement, enrolment, and mobilization of allies – which can also be applied to strategic urban design; 1) the formulation of a strategic vision and the identification of a set of actors who are concerned with the formulated goals; 2) project development and gathering of actors through negotiation of and with actors; 3) definition of concrete design actions and commitment of project actors; 4) implementation of design actions and activation of new actor-networks (Braae and Tietjen, 2011; Tietjen, 2018) (Figure 1).

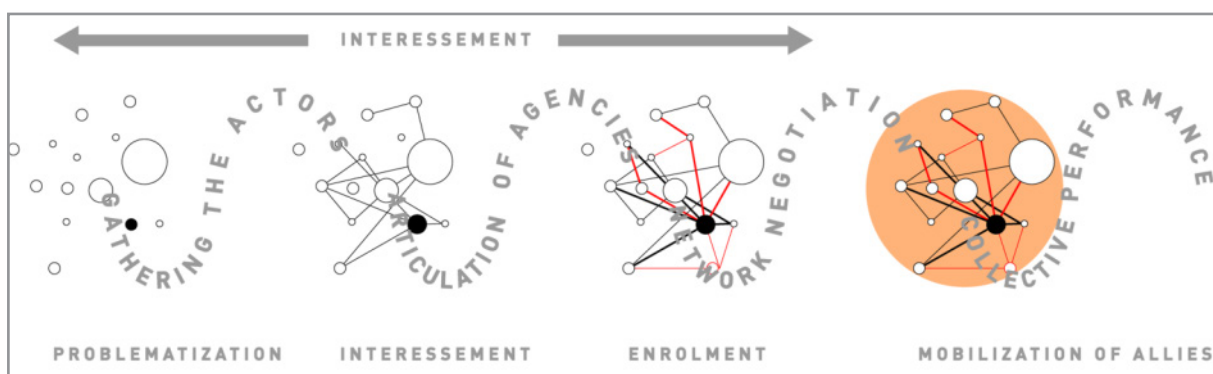


Figure 1: Strategic design as translation (Tietjen, 2011, p.114). The diagram shows how a project (the black dot) develops from the first vision to the realised project by assembling human and non-human actors (the black circles) until a constraining actor-network has been built.

2.2. The Quality of the Connections is Key to Design Quality

Thinking of spatial design as translation enables new ways of studying design outcomes in terms of what design *does* – how things create new connections and make humans and non-humans work together in new ways. Quite different from the shiny images that urban designers usually present us with, ANT provides us with a view in the machine room; unveiling that the result of spatial design actions is much more than just new physical appearances and local functions. Rather, design actions co-constitute new, dynamic socio-material assemblages, which potentially effect change across multiple scales. They are *interventions* in a dynamic context rather than fixed results; by further articulating existing and establishing new connections among people, ideas and things, design actions literally reassemble the social (Tietjen, 2011).

A translation model suggests that this reassembling process starts long before the implementation of design actions with the gathering of actors and the negotiation of cooperative relationships which these actors would all commit to. After implementation, it is the work done in interaction with, and stimulated by, design interventions that keeps an assemblage together and *makes the social hold* (Yaneva, 2009). This is a continued process and, as a result, the assemblage will carry on developing and transforming over time; it will gather and integrate new actors and omit others; it will thrive and grow or eventually fall apart. In short, translation is an open-ended process with an essentially uncertain outcome (Tietjen, 2011).

From an ANT view, design is what it does to and together with other actors (Tietjen et al., 2017). This means that the quality of the connections established and sustained by design actions is key to spatial design quality. Design quality shows in the work done and in the capacity of the assemblage to sustain itself and eventually expand over time. Therefore, in the assessment of design outcomes, the physical and functional results of design actions cannot be separated from the assemblages they co-constitute or from the collective effects of these assemblages over time.

2.3. Follow the Actors!

ANT-scholars have shown that studying translation requires ‘following the actors’ whilst mapping their controversies. This has enabled them to trace how new assemblages are being formed and what differences and transformations they produce (see, for instance: Callon, 1986; Latour, 2005).

In order to understand the design outcomes of the strategic spatial projects on Bornholm we first studied the process of their making from the beginning of the planning initiative *Land of Opportunities* to the implementation of the design projects. Thereafter, we studied their transformative effects after implementation. These could be traced back to the design interventions and the new assemblages that they had co-constituted. By analysing the interaction between people, things and ideas in the planning and design process, we were able to identify the actors who came to work together in new assemblages and describe the socio-material effects in terms of the work done by these assemblages.

3. Methodology

3.1. A Qualitative Multi-Method Approach

To study the Bornholm cases as translations, we applied a qualitative multi-method approach. We analysed primary documents from the planning and design process (planning and design documents, status reports, minutes from meetings and project evaluations carried out by a consultancy firm), related municipal policies and plans, external project communication (project website, press reports and book publications), and media reactions in the local press; carried out repeated site visits and interviewed key actors in the process (civil servants from the municipality and representatives from local communities and user groups).

We began the case study in August 2014 with introductory site visits and on-site interviews with municipal planners and local key actors in all the *Land of opportunities* projects. These interviews were conducted as open-ended, semi-structured interviews about the process, the different actors' roles, and the factual and perceived results. As a result of these initial investigations we decided to focus on the four projects discussed in this paper because they clearly stood out with regard to their strategic focus and transformative effects beyond the local scale. In November 2016, we conducted follow-up interviews on long-term project effects with the project managers of the four cases discussed herein. Moreover, since 2015, one of the authors has been a consultant to a municipal follow-up project, Future Landscape North Bornholm, which aims to develop a strategic landscape development plan in collaboration with local communities and stakeholders.

The document studies, the site visits, and the first interviews in 2014 provided us with detailed insights into the making of the project and its immediate outcomes. The follow-up interviews in 2016 provided us with a more nuanced understanding of the project outcomes and contributed knowledge about the long-term effects at local and regional scales. Finally, the direct involvement in a municipal follow-up project has provided insight into how local projects have influenced municipal planning practice and, specifically, how they prepared the ground for a strategic landscape development plan.

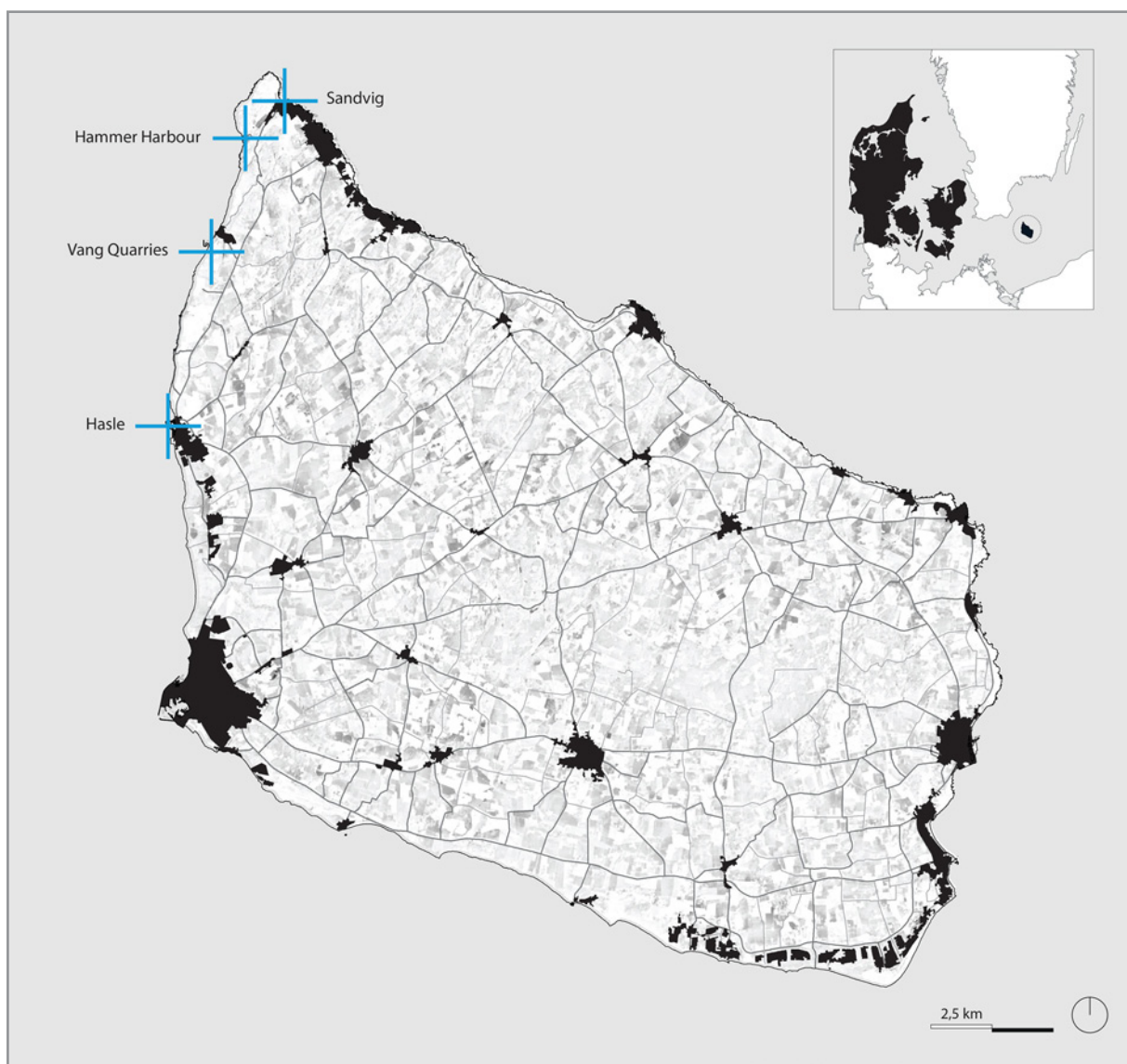


Figure 2: Map of Bornholm: The blue crosses mark the project locations: Sandvig, Hammer harbour, Vang quarries and Hasle harbour. The small map shows the location of Bornholm (marked with a circle) in relation to Denmark, Sweden and Germany.

3.2. Case Background Information

Bornholm is an island in the Baltic Sea, east of Denmark, south of Sweden, and north of Poland. Bornholm's Regional Municipality covers the entire island, which has close to 40,000 inhabitants on a surface area of 589 km² (Figure 2).

Since the 1980s, the population has been in continuous decline. From 2003–2014, one in ten inhabitants (4,500 people) left Bornholm (Bornholms Regionskommune, 2014). There are few work places for the highly educated and employment opportunities in the primary sector have decreased, especially after the collapse of the fishing industry in the early 1990s and the successive closure of granite quarries since the 1970s. On the other hand, the island has distinctive place-based resources: a long coastline with small harbour towns and fishing hamlets, characteristic rock formations, and large forests and wetlands, which together form a unique landscape. Also, many local communities, associations and interest organisations are engaged in local development (Sloth Hansen, Møller Christensen and Skou, 2012).

These place-based resources and the active population formed the basis for the planning initiative *Land of Opportunities* (2007–2012), which was initiated and co-financed by the philanthropic organisation, Realdania. Bornholm's Regional Municipality carried out seven strategic spatial projects within this framework, each with several physical interventions, for a total sum of 77 million Danish Crowns (€10 million) co-financed by the philanthropic organisation, other sources of external funding, and the municipality.

Land of Opportunities first focused on the shrinking small towns in the interior of the island, as these were thought to be the most pressing problem. After two years, the planning process had resulted in the creation of only three small projects with a very local focus and little strategic ambition for settlement and tourism in Bornholm (two projects established green paths to better link the small villages with their surrounding landscape, while the third project converted part of the parking space in front of a local supermarket into a public open space). The total cost of these projects was only 7.5 million Danish Crowns (€ 1 million). Given that this represented a significant underspend of the total *Land of Opportunities* budget, it was decided that further new projects should be developed on the basis of existing ideas from local communities, existing development initiatives and, not least, existing possibilities for external financing. This led to a shift in focus from the interior to project development on the coast (Sloth Hansen, Møller Christensen and Skou, 2012).

The four projects discussed in this paper are all second-generation *Land of Opportunities* projects on the coast. The focus of each project was on the transformation of post-industrial landscapes. They were developed in a short time span of only three years (2010–2012), but accounted for the majority of investments made; 24.5 million Danish Crowns (€3.3 million) for the *Granite Adventure and Hammer Harbour*, 16.5 million Danish Crowns for *New Life in Vang Granite Quarry* (€2.2 million), 10.2 million Danish Crowns for Sandvig Beach Promenade (€1.4 million) and 18.5 million Danish Crowns (€2.5 million) for *Hasle Harbour*, a total of 69.7 million Danish Crowns (€9.4 million) (Sloth Hansen, Møller Christensen and Skou, 2012).

4. Translations of Four Post-Industrial Landscapes

4.1. The Granite Adventure and Hammer Harbour



Figure 3: Aerial photo of the Hammerknuden promontory with Hammer harbour to the south-west and Sandvig to the north-east. © COWI 2016

4.1.1. Context

Hammer harbour occupies a picturesque location on Bornholm's west coast at the foot of the ruin of Hammershus, which is one of the island's biggest tourist attractions. Hammer harbour was built as a granite shipping harbour in the early days of Bornholm's granite mining in the late 1800s. During the heyday of the granite industry, Hammer harbour was part of a vast production landscape with several quarries on the

promontory of Hammerknuden (meaning: hammer-shaped crag of granite) and a large granite processing plant was located on the harbour. The last granite was shipped in 1974 after which the production buildings and transport structures were dismantled, and the whole promontory was listed as a protected nature area. Since then, local anglers, sailors and the rowers from Sæne boat club have created new life in the harbour; over the years, an allotment-like environment developed in relation to the new harbour activities (Bornholms Regionskommune, 2010a, p.3), but the harbour itself started to decay and did not match its exclusive location and the up to 100,000 visitors every year (Sloth Hansen, 2014, p.21).

4.1.2. Project Development

In 2007, Bornholm's mining industry was highlighted as one of 25 particularly valuable industrial heritage environments in Denmark. From 2008–2009, the municipality developed a new local development plan for Hammer harbour and, together with existing users, tidied up the area. This left a large undefined space next to the harbour, which could be used for new purposes. Concurrently, the municipality pointed out the Hammershus area – including Hammer harbour – as a regional focus area for the development of recreational activities and outdoor life (Bornholms Regionskommune, 2011, p. 105). These two initiatives paved the way for the *Land of Opportunities* project, the overall aim of which was 'to strengthen the communication of the Bornholm granite adventure and improve the quality of the physical environment' (Bornholms Regionskommune, 2010b, p.1).

In dialogue with users and stakeholders, municipal planners identified needs and desires for new facilities in Hammer harbour. In addition, local heritage experts from the Bornholm Museum informed the process. The ideas developed formed the basis of an architecture competition for a new master plan and the design of new multi-functional harbour facilities. The winning proposal was then negotiated and further developed with local users and stakeholders. New actors joined during this process, which initiated new design interventions: the kayak club in Sandvig, a small town a few kilometres away, became interested in moving to Hammer harbour after seeing the master plan and a distinctive kayak shed was added to the project. The new harbour facilities were opened to the public in June 2012 (Sloth Hansen, Møller Christensen and Skou, 2012; Sloth Hansen, 2014).

4.1.3. Key Design Interventions

The following three key interventions improved and reorganised the harbour:

- The port facility was restored to reveal its original granite and timber constructions; a new jetty was constructed and the fault along the coastline was rebuilt;
- A new multi-functional building, a new café, and new toilet facilities in the form of three small timber buildings on a wooden deck were established on the large open space next to the harbour;
- A new, long kayak shed was built in front of the existing sheds stretching halfway across the new open space and defining a boat-parking area and a parking area for cars and tourist buses.



Figure 4: View of Hammer harbour with the new kayak shed and the cluster of new facilities; in the background, the ruins of the medieval castle, Hammershus.

Concentrating and staging existing and new activities in a new iconic building ensemble was clearly the main design strategy of this project. The characterful timber building ensemble created a new visual landmark and gathered existing and new activities on the harbour, while the materials used along with their size and colours are well-integrated with the surroundings. The small open spaces on the wooden deck between and around the buildings provide local users and visitors with shelter and a place to meet informally. The so-called 'multi-house' contains a new clubhouse for the Sæne boat club and an indoor meeting and exhibition space, which is open to the public year-round, 24 hours a day. A permanent poster exhibition communicates the history of Hammer harbour through 100 years of 'granite adventure' on North Bornholm. Besides the exhibition, the 'granite adventure' is communicated through websites, apps, educational material, and new routes in the landscape (Bornholms Museum n.d).

4.1.4. New Assemblages and Collective Effects

The new facilities considerably expanded the actor-network around Hammer harbour and intensified the interactions between users and activities. In 2014 – two years after completion – the municipal project manager, Vivi Granby, reported to the Danish planning magazine *Byplan* that 'the multi-house attracts local users, visitors and associations from the whole island as well as runners, divers, kindergartens and schools, who use the area year-round' (Sloth Hansen, 2014, p.22).

According to Granby, the active participation of users and stakeholders in the planning process was decisive for the project:

The new buildings divided people's opinion at first, but they have provided the harbour with a new heart... (they) have become an icon of the place and ... have gathered and strengthened the harbour life (Sloth Hansen, 2014, p.21).

'A few members left Sæne boat club because they preferred things to remain just the way they were', recalls chairman Kenn-Erik-Olsen (Personal communication, 13 August 2014); but the project also attracted new

club members and new harbour users: The Sandvig Kayak Club moved to Hammerhavn. The new harbour café has been a great success and was favourably mentioned in the international journal *Euroman* both for the quality of its food and its architecture (Kaas, 2015). Since 2012, several tourism-based businesses have set up new activities such as guided kayak tours, stand-up paddle surfing, and angling from small boats, whilst many outdoor events use Hammerhavn as a base or stopover, and the number of overnight visiting boats has increased considerably, report project managers Vivi Granby and Jacob Jensen (Personal communication, 15 November 2016).

The cooperation with Bornholm Museum on the heritage of the area led to a comprehensive study of the history of Bornholm's mining history (Bornholms Regionskommune, Kulturarvsstyrelsen, Bornholms Museum, 2011). This further informed the *Land of Opportunity* projects in Sandvig and the Vang quarries. In this way, the project led to a new strategic focus on communicating Bornholm's granite mining history. Moreover, the municipality expects synergies to emerge between the Hammer harbour project and a forthcoming new visitor centre for the nearby ruin of Hammershus castle (Bornholms Regionskommune, 2010b).

4.2. Sandvig Beach Promenade

4.2.1. Context

Sandvig is a small town, situated right at the rocky northern tip of Bornholm, which is known as the Hammerknuden promontory. Originally a fishing hamlet, Sandvig developed into a residential town for workers in the nearby granite quarries and became a seaside resort. Today, tourism is Sandvig's main industry. The town has a large tourist population in the summertime, but only 500 full-time residents. When the last store that was open year-round closed, Sandvig became a 'ghost town' in winter. The urban environment was run-down, which meant that tourists went to nearby Allinge for shopping and entertainment. Specifically, the beach promenade with hedges, lawns and rose beds was neglected and a large, dilapidated concrete building – a former wave pool – spoiled the beach and blocked the view over the bay towards Hammerknuden (Bornholms Regionskommune, 2004, p.2-3).



Figure 5: Aerial photo of Sandvig with the new beach promenade linking the local historical archive in the former council hall high above the beach to a historical row of granite workers' houses and a foot path to Hammerknuden promontory. © COWI 2016

4.2.2. Project Development

According to municipal planner, Gugga Zachariasdottir and resident Sus Dahl Petersen, the foundations for the renewed beach promenade were laid in 2000 when a small group of residents organised a workshop to discuss the future development of Sandvig (personal communication, 13 August 2014). Several project ideas were put forward, including the renewal of the beach promenade, and the local citizens' organisation Sandvig Association was formed. In 2004, the national urban renewal program provided funding for urban development and to improve identity and attachment to the place, renovate run-down urban structures and preserve valuable heritage (Bornholms Regionskommune 2004, p.3; see also: Ministeriet for By, Bolig og Landdistrikter, 2013). *The Land of Opportunities* project built upon this work focusing on the beach promenade, but the original idea was expanded to also communicate Sandvig's mining history and emphasise the granite adventure, thereby connecting the Sandvig project to the projects in Hammerhavn and Vang. The new beach promenade was based on a collaboratively developed design and opened in June 2011.

4.2.3. Key Design Interventions

The design strategy for the beach promenade project was to open up the town towards the sea, create a new activity space, improve access to the beach, and communicate the granite mining history by creating a link between the local historical archive in the former council hall, *Rådstuen*, and a former granite workers' settlement at the other end of the beach.

The key design interventions:

- Reshaped the existing promenade in front of the beach hotels, established a 160-m bench on the promenade and replaced the adjacent rose- and hedge plantings with more natural and open beach vegetation. The beach promenade now ends at the former granite workers' settlement from where a foot path leads to Hammerknuden.
- Established a viewing platform including stairs down to the beach, and a 'cave' under the platform itself. The cave faces the sea and is ideal for picnics in inclement weather.
- Demolished the derelict wave pool and restored the dune landscape next to the beach, thereby opening up the view of Hammerknuden across the bay.



Figure 6: Sandvig. The weekly market around the long bench along the beach promenade with the new viewing platform and stairs to the beach in the background. Photo: Sus Dahl Petersen

4.2.4. New Assemblages and Collective Effects

The new beach promenade was quickly appropriated for midsummer feasts, a local children circus, and line dance performances (Sloth Hansen et al., 2014). In the summer, a weekly market is held, and an annual music festival has been held since 2015 (Ebdrup 2016a). There are plans to open the renovated hotel and two new cafés year-round (Ebdrup, 2016b). The youth hostel has been renovated and is open year-round, and a boarding house was recently bought by 'Copenhageners', (Kaas, 2016). The Sandvig Association website (www.sandvig.info), boasts that the village has 52 entrepreneurs (mostly in tourism) and that 'several' businesses are open year-round. Whether this is the result of the area renewal or specifically the beach promenade is difficult to determine, but it is safe to assume that the improvements have been noted and have made a positive contribution to local identity. Sus Dahl Petersen states:

I think it is appreciated. People visiting will say 'Oh, it looks great' – visitors who knew the place before. Then you feel proud as a citizen, and you can pass it on to others. I think it's great (personal communication, 13 August 2014).

Sandvig Association, has proved to be a stable actor-network and continues to pursue new projects. In particular, two follow-up projects stand out: The new Hammerknuden pathway and the renovation of Sandvig harbour.

Whilst there is already a path along the coast, the Hammerknuden pathway will lead the hiker over the top of the area, past former quarries and 'hitherto forgotten nature' all the way to Hammer harbour (Ebdrup, 2016c). Sandvig Association has promoted the project idea and received funding from private foundations, the municipality and the national forest agency. The association has also agreed to help maintain the pathway in the future. This project further strengthens the communication of the *Granite Adventure*, while it also builds on and expands the networks and competencies developed during the area renewal project.

Sandvig harbour now serves as a marina. In 2016, the municipality set aside funding to renovate the piers. In cooperation with harbour manager Jakob Jensen, Sandvig Association has managed to obtain funding for a sauna for winter swimmers, to be established 2018. This project was inspired by *Land of Opportunities* in Hasle and draws on the networks and competencies created during that project (personal communication, Jakob Jensen, 15 November 2016).

4.3. New Life in Vang Granite Quarry

4.3.1. Context

A few kilometres south of Hammer harbour, near the village of Vang, Vang Pier marks the entrance to the former granite quarries of Ringebakkerne – an impressive man-made rocky landscape that stretches for more than a kilometre into the interior of the island. When the quarries were still in use, the owner, NCC Roads A/S, allowed the area to be used for recreational purposes outside working hours, such as mountain biking or rappelling. In 2002, the national sports association, DGI, held their annual event in Vang quarry. However, for the majority of Bornholmers and tourists, the area was closed and completely unknown (Sloth Hansen, Møller Christensen and Skou, 2012, p.173).

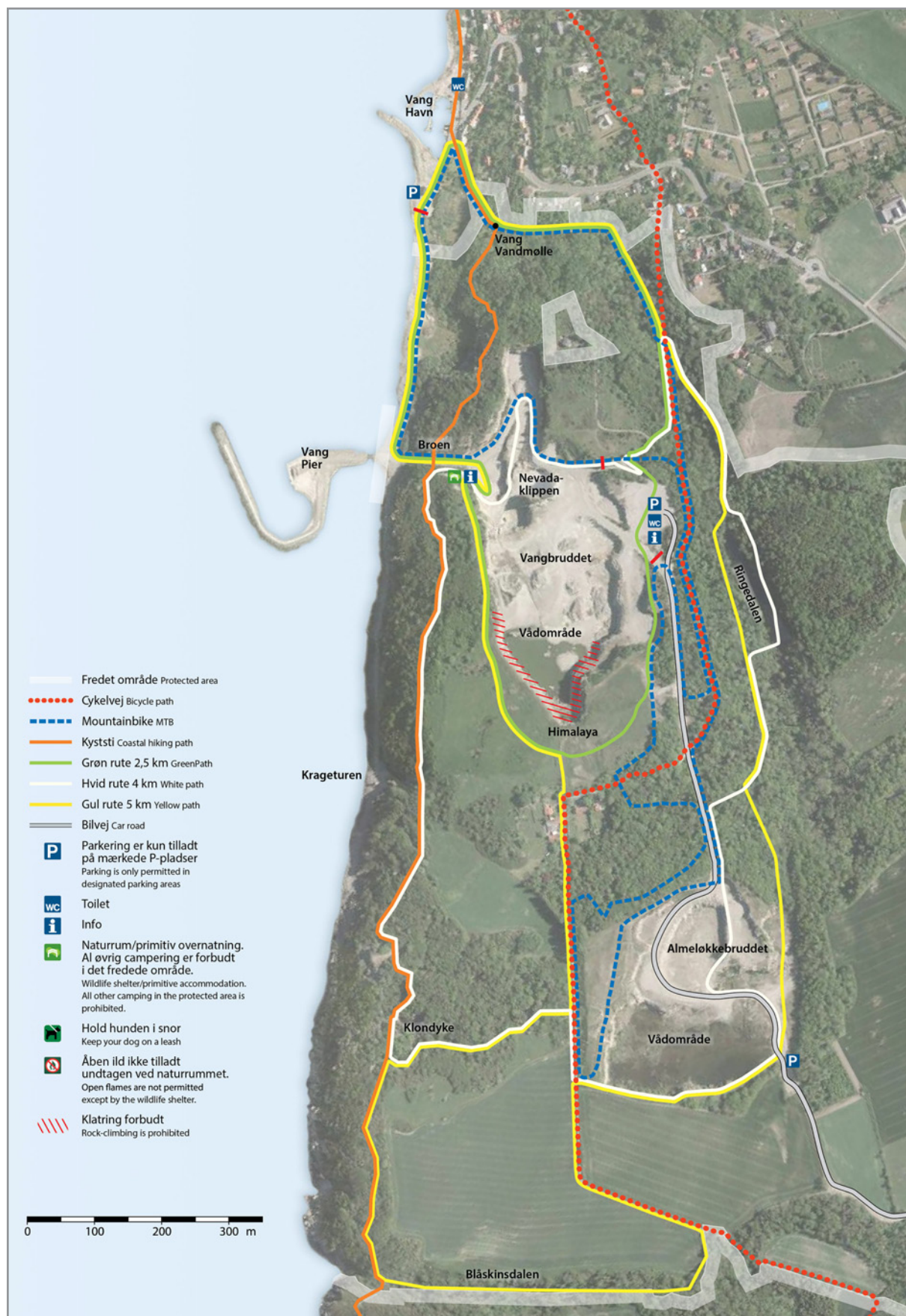


Figure 7: Vang quarries with the new path system and the main destinations.
© Bornholms Regionskommune.

4.3.2. Project Development

Before the quarries were closed, a plan to regenerate the area was formulated with an exclusive focus on nature conservation (see map on figure 7). However, in 2008, the Bornholm Outdoor Council proposed a vision for outdoor life on Bornholm in which the Vang quarries were to be transformed into a new regional outdoor life centre (Friluftsrådet Kreds Bornholm, 2008). The municipality approved of the idea and initiated an ambitious project to transform the quarries into a multifunctional open space for nature *and* outdoor life within the framework of *Land of Opportunities* (Sloth Hansen, Møller Christensen and Skou, 2012, p.173).

In 2011, the municipality assumed ownership of the area and conducted an on-site workshop with stakeholder organisations (the regional tourism organisation, Destination Bornholm; Team Cycling Bornholm; Bornholm's Climbing Association; Bornholm's Outdoor Council; the Nature Conservation Association Bornholm and the Danish Ornithologist Association Bornholm), the former owner, and representatives of local communities. The workshop was facilitated by the landscape architecture firm that subsequently designed a shelter and viewpoint in the quarries. The workshop resulted in the development of project ideas, established a project working group, and initiated an extended dialogue about potential conflicts of interest between nature protection and outdoor recreation. For example, what for some was the nesting site of a family of protected peregrine falcons was potentially a climbing wall for others. Thereafter, the specific design interventions were negotiated incrementally in the project group and agreed with the regional nature conservation authority, Fredningsnævnet Bornholm (Personal communication, Vivi Granby, project manager, and Nina Gjettermann, Team Cycling Bornholm and Danish Ornithologist Association Bornholm, 13 August 2014). The project was completed in the summer of 2014.



Figure 8: The new shelter and viewing point on top of the derelict granite crushing plant. Photo: Vivi Granby.

4.3.3. Key Design Interventions

The overall design strategy sought to create new destinations for recreation by highlighting existing built structures and landscape elements through new activities and distinctive new architecture as well as to open up and connect the area with a new path system while protecting vulnerable nature habitats. Focused design interventions created a framework for new recreational activities, nature protection, and the development and communication of the area's mining history:

- A new access path, a few cubic metres of sand, and a diving board have converted Vang pier from a granite shipping pier into a public beach; the pier was lowered by several metres to open an unobstructed view of the sea from Vang village and 60,000 tons of granite was removed and used to restore several harbours on Bornholm.

- At the derelict granite crushing plant, information boards communicate the history of this particular building. On top of the plant, two sculptural wooden structures have been added; a new viewpoint provides a spectacular view of the quarry and creates a new visual landmark, while a new shelter creates an informal place to stay.
- On the prominent Nevada cliff, climbing routes have been established.
- A new retention basin protects the breeding site of peregrine falcons and has created a destination for ornithologists.
- A new path network and signage provides access to the landscape and guides visitors, linking the new destinations and facilitating new activities such as mountain biking, and hiking, while protecting the vulnerable nature areas.

4.3.4. New Assemblages and Collective Effects

Since 2012, several recreational events have taken place. Notably, Vang beach party, a bi-annual music festival arranged by young 'exile' Bornholmers, has attracted around 1,000 visitors every year since 2012. The Nevada Cliff is now a top destination for climbing novices, while Vang quarries has been featured as a prominent destination in an international climbing guide (Kurz, 2014), whilst extreme and mountain bike (MTB) races targeting international participants have been organised. Just as importantly, the quarries are being used by Bornholmers and tourists for everyday recreational activities such as walking, school visits, and weddings. In particular, the shelter has been extremely popular. Vang pier is popular for swimming, angling and diving and is also being promoted by several tourism businesses. In the nearby village of Vang, the number of cafés and shops have increased, according to project manager Vivi Granby (Personal communication, 12 August 2014 and 15 November 2016).

Many of the new users and the new activities, which are supported and stimulated by the design interventions, can be traced back to the collaborative process, which gathered and engaged the actor-network that came to work together in and around Ringebakkerne. The assemblages of people and things gathered throughout the process have stabilised and taken shape around the new design interventions, while also attracting new users and activities.

Holistic design solutions, such as establishing a retention basin in front of the falcons' cliff to create a 'natural' buffer zone between the birds and the interested public, mitigated conflicts and made it possible to include functions other than nature conservation in the protected area. However, today, the nature protection status of the area restricts further changes in the landscape, thereby hampering the development of additional new activities and assemblages. The fact that the MTB trails have proven to be too steep for 'everyday' MTB cyclists, has led local MTB enthusiasts to propose the construction of new more-manageable trails. However, the municipality disapproved due to the area's protection status and so as to prevent conflict between user groups (Personal communication, Vivi Granby, 15 November 2016).

4.4. Hasle Harbour



Figure 9: Hasle harbour with the new harbour bath in the northern part of the harbour and the new beach island in the southern part of the harbour. © COWI 2016

4.4.1. Context

The small town of Hasle (about 1,700 inhabitants) is located a few kilometres south of Vang and a few kilometres north of Rønne, where ferries to Bornholm arrive. Hasle was a working-class town, and not picturesque. Accordingly, it was a low-status town according to tourists and other Bornholmers (Personal communication, Kaj Erik Mortensen, Knud Erik Olsen, Sven Olaf Kjær, Bytinget, Hasle, 13 August 2014). In the early 1980s, a major extension to the harbour was constructed to serve the then thriving fishing industry. However, ten years later, the Baltic Sea fishing industry collapsed and large parts of the almost 10 ha harbour area have been vacant ever since (Sloth Hansen, Møller Christensen and Skou, 2012).

4.4.2. Project Development

Like Sandvig, the *Land of Opportunities* project in Hasle grew out of a local area renewal project, which was conducted from 2008-2014 in collaboration with local residents and associations, organised in Hasle Byting (Hasle City Court). Hasle Byting selected the harbour for area renewal and proposed a number of projects focusing on new recreational uses. As a result, the municipality prepared a local development plan for the southern part of the harbour in 2009. A temporary bathing platform at the northern end of the harbour was a great success, and in 2011, the municipality conducted a competition to design a permanent harbour bath (Sloth Hansen, Møller Christensen and Skou, 2012).

4.4.3. Key Design Interventions

The *Land of Opportunities* project in Hasle co-financed four design interventions to transform the harbour into a public open space with new recreational uses:

- A new harbour bath with a prominent diving tower and a sauna creates a new destination at the northern end of the harbour.
- Lowering the quays provides a better view of the water and creates new places to stay.
- A new harbour square at the southern end of the harbour establishes a market place where fishermen in Hasle can sell their fish.
- From the harbour square a bridge leads to a new urban beach on an artificial island, which was created by digging a new canal through a former landfill site.

The harbour bath was opened to the public in July 2013; the new beach followed in July 2014.

The strategy behind the project was to create two new destinations which rejuvenated both ends of the harbour; connecting the two ends as well as the harbour with the town. The project has also improved Hasle's connection with the landscape; specifically, the new beach on the island creates a 'natural' link with the sea and the coastal landscape and beaches south of Hasle.



Figure 10: Hasle harbour bath. Photo: Signe Find Larsen, White architects



Figure 11: Hasle harbour: the new harbour terraces on the lowered quays at the southern end of the harbour.
Photo: Gugga Zachariasdottir.

4.4.4. New Assemblages and Collaborative Effects

The municipal project manager, Gugga Zakariasdottir, reports that Hasle harbour bath has not only become a location for swimming and relaxing, but also a landmark which has created a reason to go to Hasle, given the town a new identity and made it more attractive to live in: 'from being a town you used to drive or cycle past, Hasle has become a destination for tourists and residents from all over the island' (Sloth Hansen, 2014, p.23).

The new facilities and physical improvements to the harbour have also stimulated private investments and are attracting new businesses. The boat motor club, Columbus, established a maritime museum in a vacant building on the new harbour square. A new beach café opened in 2014 and was doubled in size in 2016, while two existing cafés have considerably increased their turnovers. Several providers of outdoor activities, such as angling and kayaking, have moved to Hasle harbour. In 2015, the sale of fresh fish commenced, and the existing smokehouse now offers activities such as smoking fish and tasting events (Personal communication, Gugga Zakariasdottir, 15 November 2016). In 2016, there was a 16 percent increase in the number of overnight visiting boats to Hasle harbour, which resulted in a 23 percent increase in income for the harbour (Larsen, 2016). Currently, a house boat project is in the development phase; this involves the construction of ten locally-produced boats (Personal communication, Jakob Jensen, 15 November 2016).

Zakariasdottir emphasises that the transformation of such a large area as Hasle harbour takes time; the new physical framework needs to be brought into action (Personal communication, 13 August 2014). Collaboration during the development of the project has been vital in gathering together a network of associations and residents who continue to arrange activities and events in connection with the new facilities year-round. For example, Hasle Byting has arranged a local music festival and midsummer bonfires at the new beach, which have attracted a large number of visitors (Stubkjær, 2016).

Working for, and with, the design interventions has strengthened the sense of community in Hasle: 'Before the area renewal project, only a handful of residents came to local events, now we can easily mobilise 200–300 people' (Personal communication, Kaj Erik Mortensen, Knud Erik Olsen, Sven Olaf Kjær, Hasle Byting, 13 August

2014). Currently, Hasle Byting is working on a new plan for the artificial island and the beach to create more activities (Larsen, 2016).

5. Perspectives from the Four Projects

When comparing the four projects, we find several recurring effects which are particularly relevant in the context of rural decline:

- New regional communities of interest developed around new recreational activities, thereby establishing new social organisations across shrinking local communities.
- Concentrated, shared facilities and activities for both tourists and local users increased public life in sparsely populated areas.
- The landscape became a focal point for strategic design: all projects improved the connectivity between settlements and landscape. The transformations of the Vang quarries and Hammer harbour additionally created, or substantially improved, public spaces outside the settlements, which improved access to the landscape and initiated new physical and mental connections across North Bornholm.
- The transformation of Hasle harbour and the Sandvig beach promenade also increased local pride and citizens' identification with the town and their sense of community, which today manifests itself in the continued engagement of local actors in events and activities in and around the new public spaces and the development of local follow-up projects.
- All the projects have presumably triggered – or at least improved the basis for – small scale, locally-based business development.

Three of the four projects focused on the transformation of a former production landscape into a recreational public space, while the project in Sandvig linked the development of public space to the town's mining history. A few key design interventions brought in new recreational facilities and activities in a manner which reorganised the structure and staged the transformation to a new identity, thereby transforming how the whole landscape is experienced. Identified key strategies are the concentration and staging of existing and new activities in characterful new architecture, the establishment of new destinations for recreational activities in and around characterful existing built structures and landscape elements, and the creation of new connective path networks.

While all the projects resulted in local physical and functional transformations, our analysis shows that their effects also reach far beyond the local intervention areas. The project in Vang quarries achieved new physical connections on a large scale by opening up a previously closed area, creating new paths and enhancing the connectivity of existing path networks. The projects at Hammer harbour and Sandvig led to improved connectivity between the two locations and across the Hammerknuden promontory. The communication of Bornholm's mining history created new cross-local mental connections. Finally, all the projects created new social connections across multiple scales by gathering and engaging people, as well as organisations and communities in the use and, to some extent, further development of the project areas.

A collaborative process which engages local communities, stakeholders and users in the project development appears to be vital for creating and maintaining the new activities as well as new communities of interest around the design interventions. In particular, the projects in Hasle and Sandvig, which were part of a long-term local renewal process, demonstrate that collaborative design interventions can create strong assemblages of things and people through strong senses of ownership, active use of and care for the renewed public spaces, and continuous engagement in their future development. Existing evaluations of Danish area renewal projects in small towns confirm the positive experiences from Hasle and Sandvig (Aagaard, Tychsen, 2016).

In all four cases, the municipal project managers focused on broad collaborations with local actors and on their integration with municipal strategies and plans. However, although all four projects were part of the same strategic planning initiative and were located in the same geographical area, they were largely developed and managed independently as local projects. This might partly be explained by the fact that all the project ideas emerged before and outside *Land of Opportunities* and were eventually adapted to fit the scope of the initiative – to demonstrate the potential of strategic place-based development – rather than the other way

around. In addition, the development of the local projects was used to develop and test new municipal visions for spatial development. Thus, the preservation and communication of Bornholm's mining history was framed and staged as the granite adventure first in Hammer harbour, and then in the Vang quarries and Sandvig, and has now become a brand for North Bornholm. The transformation of the Vang quarries and pier also contributed to the implementation of Bornholm's strategic focus on outdoor life. In addition, new cross-local links were established through the collaborative processes; Hasle residents, for example, participated in both the development of Hasle harbour and the Vang quarries, while members of the Sandvig Kayak Club participated in the development of Hammer harbour. A current follow-up project in Sandvig aims to establish a new path to connect Sandvig with Hammer harbour.

At the municipal level, these four projects have inspired a new strategic development initiative, which focuses equally on the development of place-based potential and collaborative processes. *Future Landscapes on North Bornholm* is part of a national research and development programme on holistic landscape development carried out by 13 Danish municipalities in collaboration with the University of Copenhagen (<http://fremtidenslandskaber.ku.dk/>). The Bornholm project aims to develop a comprehensive landscape plan based on the initiatives of recent years (hereunder *Land of Opportunities*) in which landscape, natural and cultural historical resources play an important role as development factors to strengthen the towns, tourism and other businesses in North Bornholm. The plan is being developed in collaboration with landowners, users, stakeholder organisations and the municipality (<http://fremtidenslandskaber.ku.dk/projekter/bornholm/>).

In 2016, in-migration to Bornholm was higher than out-migration for the first time in many years, although the population is still declining due to the negative birth-death ratio (Danmarks Statistik, 2017). Moreover, tourism on Bornholm has developed very positively over the last few years (Egedal, 2017). While the causes of these developments are complex, it is safe to say that *Land of Opportunities* and other similar projects have contributed to these positive developments. The outcome, moreover, demonstrates that investments in recreational infrastructure and attractive public spaces can benefit residents and visitors alike. Tourism can have both positive and negative impacts on local communities' senses of local identity (Cocossis, 2009). On Bornholm tourism has a long tradition and is primarily perceived as an asset by local communities. Yet, in light of continued population decline, it will be increasingly important to strike a balance between visitors' and residents' interests.

Land of Opportunities set out to strengthen place-based qualities and potential through local physical projects that also enhanced quality of life and improved the framework for settlement and tourism. These overall aims clearly link the initiative to the new rural paradigm and to present Danish and European rural development policies. The strong focus on the transformation of post-industrial landscapes is, moreover, similar to German project-based planning initiatives in declining regions; specifically, the much-debated International Building Exhibition (IBA) Emscher Park in the former steel and coal mining Ruhr district (see, for instance: Mayer and Siebel, 1998; Shaw, 2002) and, more recently, the International Building Exhibition (IBA) Fürst-Pückler-Land, in the former coal mining district of the Lausitz (see for instance: Altrock, 2007). Experiences from the IBA Emscher Park confirm that the transformation of post-industrial landscapes can help declining areas to overcome economic and demographic change (Shaw, 2002; see also: Seltsmann, 2015). The two German initiatives focused on sustainable landscape development at the regional scale from the start, while *Land of Opportunities* primarily focused on the creation of better local frameworks for settlement and tourism. This might be partly due to the fact that the latter started out with a general focus on place-based potential and only thereafter focused on post-industrial mining landscapes. However, the follow-up project *Future Landscape North Bornholm* is equally working with large-scale landscape development to create synergy between local projects and provide a basis for holistic landscape development. This suggests that strategic landscape development inside and outside settlements and across local and the regional scales can be pertinent when developing better quality of life in declining regions.

6 Conclusions with Implications for Further Research

This paper has investigated the socio-material effects of strategic urban and landscape design in the context of rural decline.

Actor-network theory offered an operational framework for analysing design quality in terms of what design does in a wider strategic perspective. It allowed us to study how physical projects effect socio-material change both through the process of their making and after their implementation. By studying the interaction between people, ideas and things as a collective *translation* process, we were able to identify not only immediate physical and functional changes, but also more far-reaching and long-term socio-material effects resulting from the four transformation projects of post-industrial landscapes on Bornholm, Denmark.

The analysis of the four cases showed that collaboratively developed design interventions can help transform and strengthen local identity, attract new activities and users, stimulate local business development, create new regional and international connections, and define new spatial development perspectives rooted in existing place-based resources and potential. They can also help to increase local senses of community, engage local communities and, – particularly important in the context of shrinking rural communities – encourage regional communities of interest in the development of public life.

ANT does not, however, specifically sustain post-occupancy studies where quantitative effects are in focus, neither is it well suited for analysing unresolved conflicts in planning and participation processes. An ANT-analysis focuses on the effects of controversies between actors and the resulting socio-material assemblages, while there is less focus on, for example, actors and agencies that are excluded in the planning and design process. We have been aware of this so as not to *forget* conflicts and paint an overly positive picture of the processes, yet our focus has been the outcome of strategic spatial projects.

From an ANT perspective, the quality of the connections established and sustained by design actions is vital. This means that design quality shows not only in the work conducted, but also in the capacity of the assembled actors to sustain the work and eventually expand the established networks. As this is a continual process, the connectivity of design actions and gathered assemblages is a key aspect of strategic design quality. We found that ANT is a pertinent framework for studying the long-term performance of strategic spatial projects and, in particular, how design actions can continue to gather new actors, spark new initiatives and, thereby, fuel repercussive effects. This may be an area for further research, not only to study the immediate outcome of strategic spatial projects, but also their long-term performance and connectivity. We believe that the knowledge generated by this type of study could not only be used for the assessment of successes and failures, but also in strategic ways to manage and further develop existing interventions and to initiate new projects and cooperation.

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Interviews

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Vivi Granby, municipal project manager of the projects *Hammer harbour and the granite adventure on North Bornholm* and *New life in Vang granite quarries*, 12 August 2014 (at Vang quarries) and 15 November 2016.

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Kenn-Erik Olsen, chairman of Sæne boat club, 12 August 2014 (at Hammer harbour)

Sus Dahl Petersen, member of Sandvig Association, 13 August 2014 (in Sandvig)

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